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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,705	12/01/2000	Yukihiko Okumura	15689.61	7195

7590 09/15/2008

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EXAMINER	
GHULAMALI, QUTBUDDIN	
ART UNIT	PAPER NUMBER
2611	

MAIL DATE	DELIVERY MODE
09/15/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/701,705	OKUMURA ET AL.	
	Examiner	Art Unit	
	Qutbuddin Ghulamali	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-6,8,18-20,22,23,33-37,47,49 and 53-85* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1,2,4-6,8,18-20,22,23,33-37,47,49,53-61,64-77 and 80-85* is/are allowed.

6)☒ Claim(s) *62 and 78* is/are rejected.

7)☒ Claim(s) *63 and 79* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to Remarks/Arguments filed by the applicant on 5/27/2008.

Response to Remarks

2. Applicant's arguments filed 5/27/2008, regarding claims 62 and 78 have been fully considered but they are not persuasive. Applicant remarks, page 29 and 30, that in the claims 62 and 78 as amended, Iwamatsu does not disclose calculating reliability for each of said plurality of demodulated data and selecting one demodulated data sequence based on the reliabilities.

The examiner disagrees. Applicant's attention is drawn to Iwamatsu, col. 7, lines 42-67; col. 8, lines 1-32, 52-67; col. 9, lines 1-5, wherein Iwamatsu discloses in various steps calculating a reliability for each plurality of demodulated data and selecting one demodulated sequence based on reliabilities (selects maximum correlation energy from among the reliabilities such as R0, R1,…). Iwamatsu therefore, via the various embodiments as disclosed in the art, shows the features as claimed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103 (a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 62, 78 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Andoh (IEEE, "Channel Estimation Using Time Multiplexed Pilot Symbols for Coherent Rake Combining for DS-CDMA Mobile Radio") in view of Iwamatsu et al (USP 6,487,236).

Regarding claim 78, Andoh discloses a demodulation method comprising: weighting and averaging pilot signals using a plurality of weight sequences (fig. 2; page 954, col. 2, lines 1-3, 12-15, 24-37; page 955, col. 1, lines 4-17; col. 2, lines 14-20, 28-34, 37-40). Andoh does not explicitly disclose, deriving a plurality of demodulated data sequences from a data sequence using said plurality of channel estimation values; and selecting one output data sequence by making judgment of reliability of a plurality of demodulated data. However, Iwamatsu discloses deriving a plurality of demodulated data sequences from a data sequence using said plurality of channel estimation values (col. 7, lines 42-67; col. 8, lines 1-32, 52-67; col. 9, lines 1-5; col. 20, lines 52-64); and selecting one output data sequence by making judgment of reliability of a plurality of demodulated data (col. 7, lines 42-67; col. 8, lines 1-32, 52-67; col. 9, lines 1-5; col. 20, lines 65-67; col. 21, lines 1-14). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a data sequence from a plurality of demodulated data sequences and select an out sequence of optimum reliability of demodulated data from demodulating unit as taught by Iwamatsu in the channel estimation of Andoh because by selecting an output sequence from a plurality of data

sequence having an optimum reliability it is possible to perform more correct demodulation of correlated energies.

As per claim 62, the steps claimed as apparatus is nothing more than restating the function of the specific components of the method steps as claimed above and therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the method as taught by the combined art of Ono and Iwamatsu because it can allow insertion of pilot symbols to estimate channel response of data symbols in a fading environment to mitigate noise and multi interference and improve channel estimation accuracy.

Allowable Subject Matter

5. Claims 1-2, 4-6, 8, 18-20, 22, 23, 33-37, 47, 49, 53-61, 64-77, 80-85 allowed.

6. Claims 63 and 79 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutbuddin Ghulamali whose telephone number is (571)-272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.
September 9, 2008.

/Chieh M Fan/
Supervisory Patent Examiner, Art Unit 2611